WASHDURN OBSERVATORY

University of Wisconsin

Madison, Wisconsin

March 22, 1968

AD 666835

Final Technical Report

Report Number:

Date of Issue:

Merch 1968

Grant Number:

Nonr(G)-00007-65

Project Number:

NR 046-812

Grantee:

The Regents of the University of Wisconsin

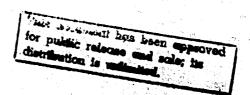
Principal Investigators: Robert C. Bless and Theodore E. Houck

Title:

The Energy Distribution in Nova Herculis 1963

Amount of Grant:

\$3,570



Best Available Copy



Final Technical Report

THE ENERGY DISTRIBUTION IN NOVA HERCULIS 1963 Robert C. Bless and Theodore E. Houck

We have completed the reduction to energy units of the photoelectric scanner observations of both Nova Her 1960 and Nova Her 1963. Data obtained on 13 mights between March 11 and May 13, 1960 and on 44 mights from Pebruary 22 to October 13, 1963 are now available for analysis. Most of the 1960 data consist of photoelectric spectral scans over the \$\lambda\$3200-6600 region; infrared data to \$\lambda\$11,500 were obtained on three nights. The 1963 data are about evenly divided between the visual and infrared spectral regions.

The latter are the first observations of the spectra of novae longward of \$\lambda\$8500; the approximately 20 features include the Paschen series of hydrogen, He I (especially \$\lambda\$10,830) and probably [Fe II] and 0 I. A few lines are still of unknown origin. The 1963 data repear to be of higher quality than those of 1960 because of better weather and the proximity of \$\alpha\$ Lyrae, a "standard" star, to the nova. Even so, the 1960 results compare well with those of Meinel (Ap. J. 1963, 137, 834), where such comparisons can be made.

A computer program for reducing the large amount of data of the 1963 nova has facilitated the reduction process. The size of this task is suggested by the following: approximately 9,000 spectral features were measured and reduced. About one-quarter of these were in the continuum requiring a deflection measurement only; the rest were of spectral lines requiring the measurement of an area. Some 2,000 features were measured on the 1960 nova.

The analysis of these data to determine the physical characteristics of the nova envelope is now underway.

(Security Classification of title, body of abatt	UMENT CONTROL DATA	· R&D	he overall topatt in clas	Mirdi
The Regents of the University of Wisconsin		24 REPORT SECURITY CLASSIFICATION Unclassified		
		26 GROUP		
THE ENERGY DISTRIBUTION IN NO	VA HERCULIS 1963	·		
4. DESCRIPTIVE NOTES (Type of report and include Final Technical Report AUTHOR(3) (Last name, first name, initial) Bless, Robert C. Houck, Theodore E.	elve detee)			4
6. REPORT DATE March 1968	74. TOTAL NO.	OF PAGES	76. NO. OF REFS	
80. CONTRACT OR GRANT NO. NONT (G) -00007-65 & PROJECT NO. NR (146-812 c.		94. ORIGINATOR'S REPORT NUMBER(5) 144-5801 Report No. 1		
	SA. OTHER REP	ORT NO(S) (Any	other numbers that may	be sealgned

13. ABSTRACT

11. SUPPLEMENTARY NOTES

Measurements of approximately 9000 spectral features of Nova Herculis 1963 obtained on 44 nights between February 22 and October 13, 1963 and covering the wavelength region from 3200 Å to 11,500 Å have been reduced to absolute energy units and are available for analysis. Similar reductions have been made for 2000 features of Nova Herculis 1960 between March 11 and May 13, 1960 in the region 3200 Å to 6600 Å.

12. SPONSORING MILITARY ACTIVITY

Department of the Navy Office of Naval Research